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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,491	07/25/2003	Roger D. Peckham	H0004168	4209
128	7590	05/18/2005	EXAMINER	
HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			NGUYEN, THU V	
			ART UNIT	PAPER NUMBER
			3661	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/627,491

Applicant(s)

PECKHAM ET AL.

Examiner

Thu Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,6-8,11,12,16-20,22,23,25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,11,12,16-20 is/are rejected.
- 7) ☒ Claim(s) 22,23,25 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/17/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The amendment filed on January 31, 2005 has been entered. By this amendment, claims 3-5, 9-10, 13-15, 21, 24 have been canceled, and claims 1-2, 6-8, 11-12, 16-20, 22-23, 25-26 are now pending in the application.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, last line, the claimed "calculating a return to path route to overfly the new candidate active waypoint" does not describe the exact nature of the system described in the specification, since the return to path route does not necessarily include the candidate active waypoint, the specification paragraph 0035 teaches that the system determined if the return path can be built to the leg associated with the candidate waypoint, and that the combined details in paragraph 0035 and 0036 and especially paragraph 0039 and fig.7 show that a return fly path cannot be built from the candidate way point (therefore the aircraft will not overfly the candidate active waypoint as claimed).

Claim 20, last two lines is similarly rejected as explained in claim 1 above.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6, 11-12, 16, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onken et al (US 6,163,744).

As per claim 1, 20, Onken teaches an aircraft flight management system that stores pre-planned lateral route of flight with a plurality of successive waypoints (col.3, lines 44-55). A method providing a return to path maneuver in the event that the aircraft deviates from the pre-planned route comprises: calculating a return path route to overfly the new waypoint (col.4, lines 33-56; col.5, lines 39-48; col.12, lines 1-26; fig.11), moreover, since Onken teaches determining the threshold value for the path elements and considering the path element when they are within the threshold (col.10, lines 38-39, lines 52-53), Onken encompasses teaching considering the return path when the aircraft is within the boundary of the preplanned route. Onken does not explicitly teach choosing either a first waypoint or a second waypoint that is following after the first waypoint as the candidate active waypoint. However, the claimed limitation stated in lines 6-12 actually means selecting the next waypoint in the preplanned route the aircraft would overfly if the aircraft deviate from preplanned route. Since Onken teaches considering candidate active waypoint P3 (fig.11) which according to fig.11 is clearly the next waypoint in the

preplanned path (col.12, lines 16-25), Onken obviously encompasses teaching calculating the return to path to the next waypoint. Onken does not explicitly teach that the return to path route will overfly the candidate active waypoint P3, however, Onken teaches selecting the return path P1, P2, P4 or P1, P3, P4, etc (fig.11) when the path has the better association with the standard route and the minimum diversion to dealt with (col.12, lines 3-31), when the return route P1, P3, P4 has better association with the standard route, and minimum diversion, the return to path route would have been the one having the candidate active waypoint P3 which the aircraft would have been overflown if deviation had not been occurred. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to eliminate the process of selecting return path route with better association with the standard route of Onken and to automatically select the next waypoint as the point on the return path the aircraft will overfly in order to save system resources and processing time when such the association is not necessary.

As per claim 6, Onken teaches a down-path waypoint P3 (fig.11), further, Onken teaches a low recaptured bank angle of 3NM (col.9, lines 22-49).

As per claim 11-12, Onken teaches modifying the pre-planned route to include new candidate waypoint (fig.5, 10, 11; col.12, lines 31-32). Further, temporarily storing data until the data is accepted so that the accepted data can be retrieved for use would have been well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a well known memory for temporarily storing all the possible waypoints that

construct all possible routes in col.12, lines 1-31 of Onken in order to allow the user to select a route that he prefers to follow.

As per claim 16, refer to claims 6 above.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onken et al (US 6,163,744) in view of Hirote et al (US 5,568,390).

As per claim 2, Hirote suggests allowing the user to selectably accepting a calculated path route (col.13, lines 17-22). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to allow the user to select the calculated return path of Onken in order to provide the user the capability of selecting the path he mostly prefer to follow.

6. Claims 7-8, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onken et al (US 6,163,744) in view of Deis et al (WO 95/19547) (enclosed IDS).

As per claim 7-8, 17-18, Deis teaches generating virtual waypoints associated with the active waypoint TGT1 (fig.4A) (the virtual waypoint are the turning points at the first replan route in fig.4A).

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onken et al (US 6,163,744) in view of Deis et al (WO 95/19547) (enclosed IDS) and further in view of Hirote et al (US 5,568,390).

As per claim 19, refer to claim 2 above.

***Allowable Subject Matter***

8. Claims 22-23, 25-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Prior art of record does not disclose a method and an aircraft flight management system disclosed in claim 1 or 20 in which an orientation path is constructed when a return path can be built from the aircraft position to a leg associated with the new candidate active waypoint at an interception of forty five degrees while staying with a capture region is possible. Prior arts of record also does not disclose generating a virtual waypoint associating with the new candidate active waypoint, the virtual waypoint provides a tracking point that lies in the path of an aircraft on a forty five degree intercept path of the new candidate active waypoint.

***Response to Arguments***

10. Applicant's arguments filed January 31, 2005 have been fully considered but they are not persuasive.

In response to applicant's argument on page 7, last two paragraphs through page 8, claim 1 actually claims that the active candidate way point should be selected as the waypoint that the aircraft should next overfly should the preplanned route be followed. According to fig.11 of Onken, the candidate waypoint that is matched with the candidate waypoint described in claim 1

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of the present application is actually the waypoint P3 (fig.11) this way point P3 is clearly determined according to the aircraft position since it is also recognized that the waypoint P5 which is further away from the aircraft is not changed in determining return path (col.12, line 6). In col.12, lines 5 and 18, the way point P3 (fig.11) is always considered in determining the return path, therefore, P3 is actually the candidate active waypoint. In col.12, lines 18-25, Onken teaches selecting optimal path between points P1, P2, P3, P4, in the particular example, it happens that the path through point P1, P2, P4 is optimal over path P1, P3, P4, however, in other scenario where the optimal path is P1, P3, P4, the candidate waypoint P3 will be selected as a waypoint for the aircraft to overfly in the return path. It is noted that the present application does not always have the aircraft to overfly the selected the candidate waypoint (refer to the 112 second paragraph reject above), the present application paragraph 0039 and fig.7 shows a situation in which the selected candidate waypoint will not be overflied, this situation seems to match with the scenerio where the path through P1, P3, and P4 (fig.11) of Onken is not optimal. Moreover, Onken teaches that prior to the system disclosed by Onken, P3 should always be a point in the return path (col.12, lines 28-30).

Arguments with respect to claim 7-8 are moot in view of the new ground of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Nguyen whose telephone number is (571) 272-6967. The examiner can normally be reached on T-F (7:30-6:00).



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 9, 2005



**THU V. NGUYEN**  
**PRIMARY EXAMINER**